

IN THE DRAWINGS:

Applicants respectfully request approval of the following drawing changes. Figure 1 has been amended to properly identify the components in accordance with the specification. Specifically, Figure 1 has been amended to properly identify first and second shafts 24 and 26, respectively. Applicants hereby submit a Replacement Sheet incorporating the changes to Figure 1. No new matter has been added.

REMARKS

The Office Action mailed May 15, 2007 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are now pending in this application. Claims 1-20 stand rejected. Claim 16 stands objected to.

Applicants note the objection to the drawings. Specifically, Figure 1 has been amended to properly identify first and second shafts 24 and 26, respectively. Applicants respectfully request approval of the indicated drawing change.

For at least the reasons set forth above, Applicants request that the objection to the drawings be withdrawn.

The objection to Claim 16 due to an informality is respectfully traversed. Claim 16 has been amended as suggested by the Examiner. Specifically, Claim 16 has been amended to remove the duplicate term "said."

For at least the reasons set forth above, Applicants request that the objection to Claim 16 be withdrawn.

The rejection of Claims 1-20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,683,034 to Johnson et al. (hereinafter referred to as "Johnson") is respectfully traversed.

Johnson describes a divergent flap seal (20) for use with a gas turbine engine exhaust nozzle. The seal (20) includes a body (26), a spine member (28), a plurality of face segments (30), and a flap position guide (31). Each face segment (30) includes a midsection (50), first and second edges (56 and 58), first and second mating flanges (64 and 66), and a scallop (78) that extends along either along the first edge (56), the second edge (58), or both. Each scallop (78) is identically sized and positioned on the face segment (30). Notably, Johnson does not describe nor suggest a first plurality of relief cuts and a second plurality of relief

cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts.

Claim 1 recites a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, wherein the method includes “providing a basesheet including a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side . . . forming a first plurality of relief cuts and a second plurality of relief cuts in the basesheet that extend at least partially across the basesheet from at least one of the circumferentially-spaced sides, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts . . . coupling the basesheet to the backbone assembly.”

Johnson does not describe nor suggest a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, as is recited in Claim 1. More specifically, Johnson does not describe nor suggest forming a first plurality of relief cuts and a second plurality of relief cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 1. Rather, in contrast to the present invention, Johnson describes a divergent seal flap including a body having a plurality of face segments, wherein each face segment includes a plurality of *identically sized and positioned scallops*.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Johnson.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 likewise are patentable over Johnson.

Claim 6 recites an assembly for a gas turbine engine exhaust nozzle, wherein the assembly includes “a backbone . . . a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and a second plurality of relief cuts and a pair of circumferentially-spaced sides coupled together by an upstream side and a

downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Johnson does not describe nor suggest an assembly for a gas turbine engine exhaust nozzle, as is recited in Claim 6. More specifically, Johnson does not describe nor suggest a basesheet including a first plurality of relief cuts and a second plurality of relief cuts, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 6. Rather, in contrast to the present invention, Johnson describes a divergent seal flap including a body having a plurality of face segments, wherein each face segment includes a plurality of *identically sized and positioned scallops*.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Johnson.

Claims 7-13 and 19 depend from independent Claim 6. When the recitations of Claims 7-13 and 19 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7-13 and 19 likewise are patentable over Johnson.

Claim 14 recites a gas turbine engine including a variable engine exhaust nozzle including a flap system coupled to the engine exhaust nozzle, wherein the flap system includes “a backbone and a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and second plurality of relief cuts and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Johnson does not describe nor suggest a flap system, as is recited in Claim 14. More specifically, Johnson does not describe nor suggest a basesheet including a first plurality of

relief cuts and second plurality of relief cuts, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 14. Rather, in contrast to the present invention, Johnson describes a divergent seal flap including a body having a plurality of face segments, wherein each face segment includes a plurality of *identically sized and positioned scallops*.

Accordingly, for at least the reasons set forth above, Claim 14 is submitted to be patentable over Johnson.

Claims 15-18 and 20 depend from independent Claim 14. When the recitations of Claims 15-18 and 20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 15-18 and 20 likewise are patentable over Johnson.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-20 be withdrawn.

The rejection of Claims 1, 3-6, 8-14, and 16-20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,000,386 to Lybarger (hereinafter referred to as "Lybarger") is respectfully traversed.

Lybarger describes a divergent nozzle flap (14) for use in a gas turbine engine. The flap (14) includes an elongated frame assembly (21), a baseplate (22), and retainer means (23). Assembly (21) includes side rails (24 and 25), a forward rail (26), and an end rail (27). Baseplate (22) is sized to slide into the channels of the rails (24, 25, and 26) such that the open frame's (21) bottom surface is covered by the baseplate (22). The baseplate (22) includes a recessed edge area (44) formed at each side edge (45) and at a forward edge (46). The recessed edge areas (44) aid in the assembly of flap (14) and facilitate ensuring that the surfaces of the rails (24-27) and baseplate (22) remain flush against one another. Notably, Lybarger does not describe nor suggest a first plurality of relief cuts and a second plurality of relief cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts.

Claim 1 recites a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, wherein the method includes "providing a basesheet including a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side . . . forming a first plurality of relief cuts and a second plurality of relief cuts in the basesheet that extend at least partially across the basesheet from at least one of the circumferentially-spaced sides, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts . . . coupling the basesheet to the backbone assembly."

Lybarger does not describe nor suggest a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, as is recited in Claim 1. More specifically, Lybarger does not describe nor suggest forming a first plurality of relief cuts and a second plurality of relief cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 1. Rather, in contrast to the present invention, Lybarger describes a divergent nozzle flap that includes a baseplate having a recessed area formed along each side edge and at a forward edge, wherein the recessed areas aid in assembly and ensure a mating contact between the baseplate and each of a forward rail, two side rails, and a rear rail.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Lybarger.

Claims 3-5 depend from independent Claim 1. When the recitations of Claims 3-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 3-5 likewise are patentable over Lybarger.

Claim 6 recites an assembly for a gas turbine engine exhaust nozzle, wherein the assembly includes "a backbone . . . a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and a second plurality of relief cuts and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective

circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Lybarger does not describe nor suggest an assembly for a gas turbine engine exhaust nozzle, as is recited in Claim 6. More specifically, Lybarger does not describe nor suggest a basesheet including a first plurality of relief cuts and a second plurality of relief cuts, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 6. Rather, in contrast to the present invention, Lybarger describes a divergent nozzle flap that includes a baseplate having a recessed area formed along each side edge and at a forward edge, wherein the recessed areas aid in assembly and ensure a mating contact between the baseplate and each of a forward rail, two side rails, and a rear rail.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Lybarger.

Claims 8-13 and 19 depend from independent Claim 6. When the recitations of Claims 8-13 and 19 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 8-13 and 19 likewise are patentable over Lybarger.

Claim 14 recites a gas turbine engine including a variable engine exhaust nozzle including a flap system coupled to the engine exhaust nozzle, wherein the flap system includes “a backbone and a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and second plurality of relief cuts and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Lybarger does not describe nor suggest a flap system, as is recited in Claim 14. More specifically, Lybarger does not describe nor suggest a basesheet including a first plurality of relief cuts and second plurality of relief cuts, wherein the first plurality of relief cuts have a

length greater than that of the second plurality of relief cuts, as is recited in Claim 14. Rather, in contrast to the present invention, Lybarger describes a divergent nozzle flap that includes a baseplate having a recessed area formed along each side edge and at a forward edge, wherein the recessed areas aid in assembly and ensure a mating contact between the baseplate and each of a forward rail, two side rails, and a rear rail.

Accordingly, for at least the reasons set forth above, Claim 14 is submitted to be patentable over Lybarger.

Claims 16-18 and 20 depend from independent Claim 14. When the recitations of Claims 16-18 and 20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 16-18 and 20 likewise are patentable over Lybarger.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 3-6, 8-14, and 16-20 be withdrawn.

The rejection of Claims 1-12 and 14-20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,690,330 to Robinson et al. (hereinafter referred to as "Robinson") is respectfully traversed.

Robinson describes a divergent seal flap (98) for use in a jet engine. The flap (98) includes a plurality of sheet metal louver elements (2) that extend along the length of the flap (98). Each louver element (2) includes a U-section having a forward leg (12), bottom portion (10), and a rearward leg (8). When two single louver elements (2) are placed together to form a flap, the forward leg (12) of one element (2) is placed against the rearward leg (8) of the second element (2). A central slot (30) is formed through each of the forward leg (12), bottom portion (10), and rearward leg (8) of each element (2). A beam plate (50) is placed along the aligned slots (30) from one end of the series of louver elements (2) to the other for the entire length of the divergent flap seal (98). To reduce heat transfer into the beam plate (50), the beam plate (50) has a plurality of scallops or semi-circular cuts (52) defined along its length. Each scallop (52) is identically sized and positioned on the beam plate (50).

Notably, Robinson does not describe nor suggest a first plurality of relief cuts and a second plurality of relief cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts.

Claim 1 recites a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, wherein the method includes “providing a basesheet including a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side . . . forming a first plurality of relief cuts and a second plurality of relief cuts in the basesheet that extend at least partially across the basesheet from at least one of the circumferentially-spaced sides, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts . . . coupling the basesheet to the backbone assembly.”

Robinson does not describe nor suggest a method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, as is recited in Claim 1. More specifically, Robinson does not describe nor suggest forming a first plurality of relief cuts and a second plurality of relief cuts in a basesheet, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 1. Rather, in contrast to the present invention, Robinson describes a divergent seal flap including a plurality of sheet metal louver elements connected by a beam plate having a plurality of *identically sized and positioned semi-circular scallops* along its length.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Robinson.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 likewise are patentable over Robinson.

Claim 6 recites an assembly for a gas turbine engine exhaust nozzle, wherein the assembly includes “a backbone . . . a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and a second plurality of relief cuts and a

pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Robinson does not describe nor suggest an assembly for a gas turbine engine exhaust nozzle, as is recited in Claim 6. More specifically, Robinson does not describe nor suggest a basesheet including a first plurality of relief cuts and a second plurality of relief cuts, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 6. Rather, in contrast to the present invention, Robinson describes a divergent seal flap including a plurality of sheet metal louver elements connected by a beam plate having a plurality of *identically sized and positioned semi-circular scallops* along its length.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Robinson.

Claims 7-12 and 19 depend from independent Claim 6. When the recitations of Claims 7-12 and 19 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7-12 and 19 likewise are patentable over Robinson.

Claim 14 recites a gas turbine engine including a variable engine exhaust nozzle including a flap system coupled to the engine exhaust nozzle, wherein the flap system includes “a backbone and a basesheet configured to coupled to said backbone, said basesheet comprising a first plurality of relief cuts and second plurality of relief cuts and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said first plurality of relief cuts and second plurality of relief cuts extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side, said first plurality of relief cuts having a length greater than that of said second plurality of relief cuts.”

Robinson does not describe nor suggest a flap system, as is recited in Claim 14. More specifically, Robinson does not describe nor suggest a basesheet including a first plurality of relief cuts and second plurality of relief cuts, wherein the first plurality of relief cuts have a length greater than that of the second plurality of relief cuts, as is recited in Claim 14. Rather, in contrast to the present invention, Robinson describes a divergent seal flap including a plurality of sheet metal louver elements connected by a beam plate having a plurality of *identically sized and positioned semi-circular scallops* along its length.

Accordingly, for at least the reasons set forth above, Claim 14 is submitted to be patentable over Robinson.

Claims 15-18 and 20 depend from independent Claim 14. When the recitations of Claims 15-18 and 20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 15-18 and 20 likewise are patentable over Robinson.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-12 and 14-20 be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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